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1 Low resolution character recognition by dual eigenspace and synthetic degraded patterns
Jun Sun, Yushinobu Hotta, Yutaka Katsuyama, Satoshi Naoi
November 2004 **Proceedings of the 1st ACM workshop on Hardcopy document processing**
Publisher: ACM Press
Full text available: pdf(482.35 KB) Additional Information: full citation, abstract, references, index terms

As the rapid progress of digital imaging technology, the requirements of character recognition for text embedded in image increase dramatically. Many image text characters are in low resolution with heavy degradation. Traditional OCR methods don't have good recognition performance on these degraded images due to poor binarization. In this paper, a novel feature extraction method based on dual eigenspace and synthetic pattern generation is proposed to recognize character images under low resol ...

Keywords: character recognition, degradation model, dual eigenspace, grayscale feature extraction

2 A more reliable reduction algorithm for behavioral model extraction
D. Vasilyev, J. White
May 2005 **Proceedings of the 2005 IEEE/ACM International conference on Computer-aided design ICCAD '05**
Publisher: IEEE Computer Society
Full text available: pdf(357.66 KB) Additional Information: full citation, abstract

In this paper we are concerned with developing more reliable model reduction algorithms. We have focused on less common, but real, examples that fail to be effectively reduced by almost all of the currently popular model reduction methods. The failure of these popular methods is due to the fact that they all separately examine controllability and observability. We then present a new method based on several modifications and extensions of the recently developed AISIAD algorithm. The modified AISA ...

3 Research track papers: Fast nonlinear regression via eigenimages applied to galactic morphology
Brigham Anderson, Andrew Moore, Andrew Connolly, Robert Nichol
August 2004 **Proceedings of the tenth ACM SIGKDD international conference on Knowledge discovery and data mining KDD '04**

L9: Entry 1 of 2 File: USPT Dec 24, 2002

DOCUMENT-IDENTIFIER: US 6499026 B1
TITLE: Using hyperbolic trees to visualize data generated by patent-centric and group-oriented data processing

Abstract Text (1):
A system, method, and computer program product for processing data are described herein. The system maintains first databases of patents, and second databases of non-patent information of interest to a corporate entity. The system also maintains one or more groups. Each of the groups comprises any number of the patents from the first databases. The system, upon receiving appropriate operator commands, automatically processes the patents in one of the groups in conjunction with non-patent information from the second databases. Accordingly, the system performs patent-centric and group-oriented processing of data. A group can also include any number of non-patent documents. The groups may be product based, person based, corporate entity based, or user-defined. Other types of groups are also covered, such as temporary groups. The processing automatically performed by the system relates to (but is not limited to) patent mapping, document mapping, patent citation (both forward and backward), patent aging, patent bracketing/clustering (both forward and backward), inventor patent count, inventor employment information, patent claim tree analysis, and finance. Other functions and capabilities are also covered, including the ability to utilize hyperbolic trees to visualize data generated by the system, method, and computer program product.

Brief Summary Text (13):
A number of patent searching tools are available, such as the United States Patent and Trademark Office (USPTO) Automated Patent System (APS), and the on-line search services offered by Lexis and Westlaw. Other providers of patent information and patent search tools include Derwent, MicroPatent, Questel, Corporate Intelligence, STN, IFI/Plenum, The Shadow Patent Office (EDS), IBM, and CAS. These tools are not analysis tools. Instead, they are search tools. These tools enable a user to identify patents that satisfy a specified key word search criteria. In essence, these tools provide the user with the ability to possibly find "the needle-in-the-haystack." However, these tools have limited, if any, automated functions to aid a user in analyzing the patents, whether the company's own patents or those of competitors, for the purpose of making tactical and strategic business decisions based on the patents.

Brief Summary Text (17):
For the most part, existing patent-related tools can process only the information contained in patents. (It is noted, however, that the SmartPatent Workbench has functions to annotate patents with any information, whether or not patent related, and has additional functions to search within annotations.) These tools do not have functions for correlating, analyzing, and otherwise processing patent-related information with non-patent related information, including but not limited to corporate operational data, financial information, production information, human resources information, and other types of corporate information. Such non-patent information is critically important when evaluating the full strategic and tactical value and applicability of any given patent, or developing a corporate patent business strategy for gaining competitive advantage and increasing shareholder value based on patents.

Brief Summary Text (18):
Consider, for example, FIG. 1. A typical corporation 102 includes a research and development (R&D) department 104, a finance department 112, a manufacturing department 108, and a legal department 116 (that includes a licensing department 122 and a patent department 124). In the course of performing their respective duties, these departments generate, collect, and maintain

information, such as R&D information 106, financial information 114, manufacturing information 110 (such as bill of material information), licensing information 118, and patent information 120 (that includes the patents obtained by the company, and perhaps patents obtained by competitors).

Brief Summary Text (19):
A business analyst 126 may be assigned the job of evaluating the value of the corporation's patent portfolio (represented as part of the patent information 120). In order to fully and accurately analyze the value and applicability of the corporation's patent portfolio, the analyst 126 should ideally take into account non-patent information, such as R&D information 106, financial information 114, manufacturing information 110, and licensing information 118.

Brief Summary Text (23):
Briefly stated, the present invention is directed to a system, method, and computer program product for processing data. The present invention maintains first databases of patents, and second databases of non-patent information of interest to a corporate entity.

Brief Summary Text (24):
The present invention also maintains one or more groups. Each of the groups comprises any number of patents from the first databases. The present invention, upon receiving appropriate operator commands, automatically processes the patents in one or more of the groups in conjunction with non-patent information from the second databases. Accordingly, the present invention performs patent-centric and group-oriented processing of data.

Detailed Description Text (7):
FIG. 2 is a conceptual representation of the invention. The present invention processes patent information 204, which is herein defined to include (but not limited to) U.S. and non-U.S. patents (text and/or images) and post issuance documents (such as Certificates of Correction), and patent-related information, which includes information about patents (herein called patent bibliographic information). Accordingly, the processing performed by the invention is said to be "patent-centric" or "patent-specific."

Detailed Description Text (10):
The present invention also processes other information, preferably business-related information, including (but not limited to) research and development (R&D) information 206, financial information 216, patent licensing information 214, manufacturing information 208, and other relevant business information 210 (which may, for example, include human resources information). This other information is generally called non-patent information (since it includes documents other than patents and may further include information from operational and non-operational corporate databases).

Detailed Description Text (12):
According to the present invention, processing of the patent information 204 can be conducted either with or without consideration of any of the other information 206, 216, 214, 210, 208.

Detailed Description Text (13):
For example, a user 212 (who may be a business analyst) may be assigned the job of evaluating the value of the corporation's patent portfolio (represented as part of the patent information 204). In order to fully analyze the value and applicability of the corporation's patent portfolio, the user 212 must take into account other information, such as R&D information 206, financial information 216, manufacturing information 208, and licensing information 214, for both the corporation and its competitors.

Detailed Description Text (14):
For example, a patent's value may be linked to whether it covers technology that the corporation is currently using, or that the corporation may use in the future. For this and other purposes, the present invention includes functions for automatically analyzing the patent information 204 in conjunction with manufacturing information 208 and/or R&D information 206. Also, a patent's value may be linked to whether it has generated licensing revenue. For this and other purposes, the present invention includes functions. for automatically analyzing the

patent information 204 in conjunction with the licensing information 214. Further, a patent's value may be linked to the degree of success of the corporation's commercial products related to the patent (i.e., the commercial embodiments of the patented technology). For this and other purposes, the present invention includes functions for automatically analyzing the patent information 204 in conjunction with the financial information 216.

Detailed Description Text (15):
The invention could also be used to determine the value of a corporate entity's patent portfolio for purposes of a merger or acquisition. The invention could also be used in a merger or acquisition context to determine a corporate entity's business direction. For example, if Company A is interested in acquiring Company B, Company A could use the invention to categorize all of Company B's patents into groups. The nature of these groups would be an indication of the types of work that Company B is involved in. Other uses of the invention are described below. Further uses of the invention will be apparent to persons skilled in the relevant art(s) based on the discussion contained herein.

Detailed Description Text (18):
Being able to automatically process information on a group basis is a very important feature of the invention, and proves to be very valuable and useful. Consider the above example of FIG. 2, where the user 212 has the task of evaluating the value of the corporation's patent portfolio. Suppose that the corporation has two products on the market, Product A and Product B. Product A generated $10 million in revenue, and Product B generated $30 million in revenue. The corporation has 5 patents that map to Product A, and 3 patents that map to Product B. If the user 212 analyzes this data without regard to groups, then the user 212 will find that the corporation's revenue per patent is $5 million. That is, for every $5 million in revenue, the corporation obtains a patent. Suppose that a relevant industry benchmark indicates that a company should obtain a patent for every $6 million of revenue. According to this scenario, the user 212 will conclude that the corporation is potentially seeking greater patent protection than the industry benchmark with respect to its technology.

Detailed Description Text (24):
As noted above, according to the present invention, processing of the patent information 204 is conducted with consideration of other information 206, 216, 214, 210, 208, called non-patent information. The process of assigning patents to groups is an example of processing patent information with non-patent information. This is the case, because groups are often created according to non-patent considerations. Accordingly, any subsequent processing of the patents in a group involve, by definition, non-patent considerations.

Detailed Description Text (26):
All of these groups are created based on or in consideration of non-patent information, not patent information. Accordingly, any subsequent group processing of the patents contained in any of these groups represents, by definition, processing of the patent information 204 with consideration of, or in conjunction with, or based on non-patent information 206, 216, 214, 210, 208. This is the case, even if such subsequent group processing involves only, for example, patent bibliographic information (i.e., patent information), such as group processing based on patent issue dates or group processing based on patent references, since the groups being processed were created based on or in consideration of non-patent information, including non-patent information 206, 216,214,210,208.

Detailed Description Text (29):
FIG. 3 is a block diagram of a system 302 according to an embodiment of the invention. The system 302 includes a plurality of databases 316 that store patent information and other information, such as R&D (research and development) information, financial information, licensing information, manufacturing information, HR (human resources) information, and any other information that may be pertinent to the analysis of the patent information. The terms "database" and "table" are used synonymously herein.

Detailed Description Text (51):
The databases 316 and data contained therein are specific to the customer. For example, the databases 316 may contain information on the patents that the customer owns and/or licensees,

and information on the patents that the customer's competitors owns and/or licenses. Also, the databases 316 may contain the customer's and the customer's competitors' R&D information, financial information, licensing information, manufacturing information, and HR information.

Detailed Description Text (56):
FIG. 6 illustrates the databases 316. According to the present invention, the databases 316 store document information (that includes patent information) and information pertinent to the analysis of the document information.

Detailed Description Text (60):
Other information, such as information for the patent bibliographic databases 604 and the patent database 614, may be loaded using information provided by a third party provider, such as a third party provider that specializes in the provision of patent information in electronic form. One such third party provider is SmartPatents Inc. (SPI) of Mountain View, Calif. The patent bibliographic databases 604. may be periodically updated through a subscription service from such third party providers. Similarly, the patent database 614 may be augmented through as-needed orders to the third party providers. It should be understood that the present invention works equally well with data provided by any party as long as the data's format matches the formats of the patent bibliographic databases 604 and the patent database 614.

Detailed Description Text (111):
The financial databases 638 store financial information pertaining to the customer's business. The financial databases 638 may also include financial information on competitors' businesses (to the extent that such information is publicly known, or can be determined or estimated based on publicly known information or business practices). Such financial information may include money spent on R&D on a product line basis, gross and net revenue on a product line basis, patent licensing revenue, patent acquisition costs, etc. The invention correlates and analyzes the information in the financial databases 638 with patent information to determine, among other things, the financial impact of patents on the customer's and competitors' respective businesses. The financial databases 638 are discussed in greater detail in sections below.

Detailed Description Text (445):
Description: Performs the function specified by the function passed parameter. The function passed parameter can identify any function performed by the enterprise server 314, such as Patent Mapping, Patent Aging, Patent Citation, Inventor Employment Information, and Patent Count. Level specifies the number of levels in the group hierarchy to drill down. PatExp1 and PatExp2 specify two dates (a time range) that designate a search scope based on patent expiration (see FIG. 128). PatTerm1 and PatTerm2 specify two dates (a time range) that designate a search scope based on patent term remaining (see FIG. 128). GroupID identifies a group for which the function is performed.

Detailed Description Text (503):
Further in step 14906, the Caching subsystem 11412 identifies from the data retrieval request the patent and the portions of the patent that are being requested. Preferably, in the present invention, a patent has multiple parts or portions. These parts include the patent bibliographic information, the patent (equivalent) text file, and the patent image file. A given data retrieval request may be requesting any or all of these portions of the patent. In step 14906, the Caching subsystem 11412 identifies from the data request which patent is being requested, and also which portions of the patent are being requested. For reference purposes, the patent that is being requested is called the identified patent, and the portions of the identified patent that are being requested are called the identified portions.

Detailed Description Text (574):
The detection performed by the error detection and correction module 4612 also involves street addresses. The error detection and correction module 4612 detects a possible error if the street address has no alphabetic characters, or has no space characters, or has no digit characters. Similarly, the error detection and correction module 4612 detects a possible error with the city name if the information in the patent text file 4604 corresponding to a city name has no alphabetic characters.

Detailed Description Text (576):
Similarly, the error detection and correction module 4612 detects errors with information in the patent text file 4604 corresponding to country abbreviations by comparing such country information from the patent text file 4604 with the list of country codes utilized by the U.S. Patent and Trademark Office (and any other appropriate foreign patent office).

Detailed Description Text (577):
The error detection and correction module 4612 also checks to ensure that mandatory data is contained in the patent text file 4604. Some bibliographic fields in the patent text file 4604 are mandatory, while others are optional. For example, the patent text file 4604 must contain document type information that identifies whether the patent is a utility patent, a design patent, a plant patent, a defensive publication, etc. In contrast, the patent text file 4604 may or may not include assignee information, since a patent does not have to have an assignee. The error detection and correction module 4612 checks for mandatory information, and detects an error if mandatory information is not contained in the patent text file 4604.

Detailed Description Text (578):
Many fields in the patent text file 4604 must be in a proper format. Some of these fields were already discussed above, such as the patent number and date. Other fields which must be in a certain format are classes and subclasses, and dates. The error detection and correction module 4612 determines whether this information from the patent text file 4604 is in the proper format, and detects an error if they are not.

Detailed Description Text (581):
The error detection and correction module 4612 also detects for errors in the information in the patent text file 4604 corresponding to assignees. The same company can be listed as assignee in different patents using different names. For example, IBM can be listed as the assignee in patents using various different names, such as IBM; International Business Machines; IBM, Inc.; etc. The error detection and correction module 4612 includes a thesaurus feature that lists the most commonly used names for well-known companies. The error detection and correction module 4612 compares the assignee name from the patent text file 4604 with this thesaurus and replaces the assignee information in the patent text file 4604 with the name retrieved from the thesaurus. Alternatively, the name retrieved from the thesaurus may be written to an appropriate user-defined field of the bibliographic databases 602.

Detailed Description Text (583):
The formatting module 4614 confirms that the information in the patent text file 4604 corresponding to patent numbers corresponds to the formats shown in Table 4. If the format is not as shown in Table 4, the formatting module 4614 modifies the patent text file 4604 so that the patent number conforms with the format of Table 4. For example, consider the format of a plant patent, which is a token PP immediately followed by five digits. Assume that the information in the patent text file 4604 was as follows: PP-11111 (for illustrative purposes, spaces are indicated as dashes). This patent number is not in the proper format because five digits do not immediately follow the PP token. Instead, there is a space between the PP token and the five digits. Accordingly, the formatting module 4614 modifies the patent text file 4604 so that the patent number is in the proper format. In the example above, the formatting module 4614 deletes the space between the PP token and the five digits.

Detailed Description Text (584):
In step 9612, the parser 4610 generates a corrected and normalized patent text file 4618 from the error detected and corrected, and formatted patent text file 4604. The corrected and normalized patent text file includes both the text from the patent text file 4604 and the error detected and corrected, and formatted patent bibliographic information from the patent text file 4604.

Detailed Description Text (585):
When generating the corrected and normalized patent text file 4618, the parser 4610 may take into consideration other patent information 4605. The parser 4610 may modify the. information from the patent text file 4604 with this other patent information 4605 when generating the corrected and normalized patent text file 4619. For example, a patent is sometimes reassigned

to another company after it issues. The new assignee, however, is not indicated on the front page of the patent (because the patent was published before the reassignment took place). Often, patent reassignment information is in the assignment records of the U.S. Patent and Trademark Office (if such information was recorded with the USPTO). Such assignment records may constitute part of the other patent information 4605. The parser 4610 in generating the corrected and normalized patent text file 4618 may take into account such assignment information when generating the corrected and normalized patent text file. For example, the parser 4610 may include a note in the corresponding record of the corrected and normalized patent text file 4618 that the patent has been reassigned, and indicate the new assignee(s). This note may be, for example, in a field of the corrected and normalized patent text file 4618 corresponding to the user defined attribute in the record of the patent table 1222 (FIG. 12H).

Detailed Description Text (586):
The patent bibliographic information in the corrected and normalized patent text file 4618 is stored in normalized format. Preferably, this normalized format is a condensed, field delimited format. Essentially, in normalizing the patent bibliographic information from the patent text file 4604, the parser 4610 separates the patent bibliographic information into fields that correspond to the attributes in the patent bibliographic databases 604. These fields are delimited either using commas, tabs, or some other symbol.

Detailed Description Text (592):
In step 9622, the patent bibliographic information in the patent bibliographic flat file 4619 is loaded into the tables of the patent bibliographic databases 604. This loading operation is performed by using standard database loading utilities.

Detailed Description Text (593):
After completion of step 9622, the patent bibliographic information from the patent being processed is completely loaded into the patent bibliographic databases 604. The steps of flowchart 9602 are repeated for each patent that is to be represented in the patent bibliographic databases 604.

Detailed Description Text (638):
In step 9714, patent related information is obtained. This patent related information may include, for example, a list of the customer's patents, and a list of competitor patents. Bibliographic information on these patents are loaded into the patent bibliographic databases 604 in the manner described above, to the extent that the patent bibliographic databases 604 do not already include patent bibliographic information on these patents.

Detailed Description Text (667):
In step 10014, information on patents of interest which are not already represented in the patent bibliographic databases 604 is obtained. This information is loaded into the patent bibliographic databases 604 in the manner discussed above to the extent that it is not already represented in the patent bibliographic databases 604.

Detailed Description Text (668):
Referring to FIG. 52, this patent information that is of interest to the corporate entities represented in the corporate_entity table 1230 is represented as patent information 5204.

Detailed Description Text (692):
In step 9908, bibliographic information on the patents obtained in step 9906 is loaded into the patent bibliographic databases 604 to the extent that such information is not already stored in the patent bibliographic databases 604.

Detailed Description Text (693):
In step 9910, operators 5008 analyze the patent information 5004 in conjunction with the person databases 632 and the employee databases 634 to map the patents obtained in step 9906 to the persons represented in the person databases 632 and in the employee databases 634. In other words, in step 9910, 5 the operators 5008 identify, for each person represented in the person databases 632 and in the employee databases 634, the patents where that person is a named inventor.

Detailed Description Text (757):
The patent citation module 1004 collects data for a multi-level patent citation report by repetitively performing the steps of flowchart 8602, which will be apparent to persons skilled in the relevant arts. The level of the report desired by the operator could be contained in the information that the patent citation module 1004 receives in step 8606.

Detailed Description Text (773):
In step 8818, the client analysis module 716 determines whether the operator wishes to display the patent information in a standard format in conjunction with ownership information. If the operator elects to display the patent aging information in a standard report in conjunction with ownership information, then example display format 6902 shown in FIG. 69 is used. It is noted that, in order to utilize the display format 6902, the patent aging module 1006 must have previously have obtained ownership information on the patents identified in step 8808 from the corp_patent_xref table 1233, and forwarded this information to the requesting client 304, 306. Such an operation is represented by step 8820.

Detailed Description Text (826):
In step 9408, the exporting patent data module 1018 causes the document storage and retrieval module 408 to retrieve information from the patent database 614 corresponding to the patents selected by the operator in step 9406. The enterprise server 314 transmits this information to the client 304, 306.

Detailed Description Text (829):
As discussed above, the exporting patent data module 1018 operates to copy a portion of the customer's patent repository (stored in the patent database 614) to a operator-specified location. The operator can then work locally with this patent information. Eventually, the operator may want to update the databases 316 in the enterprise server 314 with any updates made to this subset of the patent database 614.

Detailed Description Text (831):
In step 9306, the client analysis module 716 in the client 304, 306 accesses patent information stored in an operator-specified location 9306 which is local to the client 304, 306. The client 304, 306 transfers this patent information to the enterprise server 314.

Detailed Description Text (832):
In step 9308, the importing patent data module 1016 receives this information from the client 304, 306 and loads the patent information into the databases 316, including the patent database 614 and the patent bibliographic databases 604.

Detailed Description Text (919):
Referring again to FIG. 117, the document pane 11706 includes a list of patents and other documents which are contained within a group selected from the group hierarchy depicted in the group pane 11704. The patents and documents are listed in a tabular or "spreadsheet" format. The list of patents and documents in the document pane 11706 includes both the patent numbers and patent bibliographical information for the patents, and bibliographic information for the non-patent documents. Such patent bibliographic information displayed in the document pane 11706 includes the title, abstract, inventor, class, issue date, and user-defined keywords. All additional patent bibliographic information can be viewed in the document pane 11706 by utilizing the horizontal scroll bar 11720 to sideways scroll in the document pane 11706. Other embodiments of the invention allow the user to select an arbitrary number of bibliographic fields to view. In example of FIG. 117, no patents are listed in the document pane 11706 because a group has not been selected in the group hierarchy depicted in the group pane 11704.

Detailed Description Text (979):
Referring to FIG. 141, the information on the patents identified by performing the search is presented in a tabular format. The information displayed for each patent includes the score (that is, the number of hits of the search parameters in the patent), the patent number, and the title. More or less information can be displayed for each patent. This is controlled by the operator by appropriately checking the check boxes 14004 in the Patent Search screen 14002.

Detailed Description Text (980):
The information for each patent also includes an indication of whether or not the patent is in the local repository (i.e., stored in the patent database 614). This is indicated in the column called "In Repository?" In the example of FIGS. 141-143, for example, U.S. Pat. No. 5,334,030 is not in the patent database 614. However, U.S. Pat. No. 5,540,597 is stored in the patent database 614.

Detailed Description Text (983):
FIGS. 145A-145C depict example patent information screens that display patent information on patents that are contained in the Patent database 614. The Patent display screen 14502 in FIG. 145A corresponds to U.S. Pat. No. 5,615,328 (which the operator selected by double-clicking on entry 14310 in the Search Results screen 14302 of FIG. 143).

Detailed Description Text (984):
The operator can elect to display the text of the selected patent by pressing the Text button 14504. In the example of FIGS. 145A-145C, the operator has pressed the Text button 14504. Accordingly, the text of the selected patent is displayed in the Patent Information screens of FIGS. 145A-145C. FIGS. 145A-145C represent the first three (of 15) electronic pages of the text of the selected patent.

Detailed Description Text (989):
The Patent Information display screens in FIGS. 145A-145C may also linked to external objects, such as other patents, documents, etc. In other words, the selected document is linked to external objects. For example, if the operator wishes to view the patent representing the immediate parent of the selected patent, then the operator presses a Parent Case Text button 14514. This results in the parent patent being retrieved and displayed.

Detailed Description Text (1054):
The enterprise server 314 also creates a patent bibliographic information table. An example patent bibliographic information Table 18202 is shown in FIG. 182. In the patent bibliographic information Table 18202, there is a row for each patent represented in the parent/child Table 18002. The row corresponding to each of these patents stores bibliographic information for that patent.

Detailed Description Text (1069):
Referring again to FIG. 157, further in step 15716 the tree 18302 is used to generate a hyperbolic tree. In generating the hyperbolic tree, a hyperbolic tree node is generated for each node in the tree 18302. Also, links between nodes in the hyperbolic tree correspond to links in the tree 18302. In addition to linking information, the nodes in the hyperbolic tree may also include bibliographic information for corresponding patents. Such bibliographic information is obtained from the patent bibliographic information Table 18202. Alternatively, such patent bibliographic information is maintained in the patent bibliographic information Table 18202, and retrieved as necessary (that is, such patent bibliographic information is not stored in the hyperbolic tree). Further details concerning construction of a hyperbolic tree corresponding to tree 18302 will be apparent to persons skilled in the relevant arts.

Detailed Description Text (1119):
In step 16628, the web client 304 retrieves information on the patent selected in step 16626. Step 16628 is similar to step 15722 (FIG. 157).

Detailed Description Text (1120):
In step 16630, the web client 304 displays the retrieved patent information. Step 16630 is similar to step 15724 (FIG. 157).

Detailed Description Text (1132):
In step 16812, the client 304/306 retrieves (as necessary) and analyzes the text of the claims section of the patent in order to identify claim dependencies (since it is necessary to analyze the claims, the patent claims tree function according to one embodiment of the invention is only available for those patents in the local repository). The dependency relationship between

claims is identified by parsing the claim text of the patent and identifying claim dependency language contained therein (particularly in the claim preambles), such as "the apparatus of claim 1," "the method of claim 1," "the method according to claims 3 or 4," "the system as in one of claims 4-7," "a product produced according to the method of claim 1," "a system, comprising," etc. The dependency between claims is derived by inspection and analysis of these phrases in the preambles of the claims.

Detailed Description Text (1155):
While various embodiments of the present invention have been described above, it should be understood that they have been presented by way of example only, and not limitation. Thus, the breadth and scope of the present invention should not be limited by any of the above-described exemplary embodiments, but should be defined only in accordance with the following claims and their equivalents.

Other Reference Publication (48):
Dintzner, J.P. and Van Thielen, J., "Image Handling at the European Patent Office: Bacon and First Page," World Patent Information, vol. 13, No. 3, pp. 152-154 (1991).

Other Reference Publication (84):
Jonckheere, C., "EPOQUE (EPO QUEry service) the Inhouse Host Computer of the European Patent Office," World Patent Information, CEC/WIPO, vol. 12, No. 3, pp. 155-157 (1990).

Other Reference Publication (94):
Lucas, J., "The Progress of Automation at the U.S. Patent and Trademark Office," World Patent Information, CEC/WIPO, vol. 14, No. 3, pp. 167-172 (1992).

Other Reference Publication (174):
Sibley, J.F., "The EPOQUE Suite of Applications," World Patent Information, Elsevier Science Ltd., vol. 18, No. 3, pp. 141-148 (1996).

Other Reference Publication (209):
Welcome to MicroPatent's PatentWEB.TM.. . . for Patent Information, at http://www.micropat.com/info/welcom.htm, 1 page (last visited Dec. 6, 1996).

Other Reference Publication (213):
Why should YOU be interested in Patent Information?, at http://www.micropat.com/info/interested.htm, MicroPatent, 1 page (last visited Dec. 6, 1996).

Other Reference Publication (215):
Williams, J. and Ebe, T., "STN Easy: point-and-click patent searching on the World Wide Web," World Patent Information, Elsevier Publishing, vol. 19, No. 3, pp. 161-166 (1997).

Other Reference Publication (234):
Stefanov, V., "Some Possibilities of a `Patents` Database in Determining a Firm's Policy," World Patent Information, vol. 17, No. 3, pp. 201-204 (Sep. 1995).

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of patents controlled by one or more public corporations, a portfolio of patents controlled by one or more pre-IPO companies, all patents listing one or more particular named inventors, all patents naming one or more particular prosecuting attorneys or law firms, all patents classified within one or more PTO patent classifications, or all patents issued between a first date and a second date.

54. The method of claim 49 wherein said intellectual property asset to be rated comprises one or more patents and wherein first and second objectively determinable characteristics comprise one or more of the following: number of claims per patent, number of words per claim, different words per claim, length of patent specification, number of drawing pages or figures, number of cited prior art references, age of cited references, number of subsequent citations received, subject matter classification and sub-classification, origin of the patent, payment of maintenance fees, name of prosecuting attorney or law firm, examination art group, or length of pendency in the PTO.

64. The method of claim 49 comprising the further step of generating a rating report containing at least one reported rating or ranking that is generally representative of the breadth ("B") of the intellectual property asset to be rated, at least one reported rating or ranking that is generally representative of the defensibility ("D") of the intellectual property asset to be rated, and at least one reported rating or ranking that is generally representative of the commercial relevance ("R") of the intellectual property asset to be rated.

Previous Doc Next Doc Go to Doc#

L7: Entry 1 of 1 File: USPT Apr 29, 2003

DOCUMENT-IDENTIFIER: US 6556992 B1
TITLE: Method and system for rating patents and other intangible assets

Abstract Text (1):
A statistical patent rating method and system is provided for independently assessing the relative breadth ("B"), defensibility ("D") and commercial relevance ("R") of individual patent assets and other intangible intellectual property assets. The invention provides new and valuable information that can be used by patent valuation experts, investment advisors, economists and others to help guide future patent investment decisions, licensing programs, patent appraisals, tax valuations, transfer pricing, economic forecasting and planning, and even mediation and/or settlement of patent litigation lawsuits. In one embodiment the invention provides a statistically-based patent rating method and system whereby relative ratings or rankings are generated using a database of patent information by identifying and comparing various characteristics of each individual patent to a statistically determined distribution of the same characteristics within a given patent population. For example, a first population of patents having a known relatively high intrinsic value or quality (e.g. successfully litigated patents) is compared to a second population of patents having a known relatively low intrinsic value or quality (e.g. unsuccessfully litigated patents). Based on a statistical comparison of the two populations, certain characteristics are identified as being more prevalent or more pronounced in one population group or the other to a statistically significant degree. Multiple such statistical comparisons are used to construct and optimize a computer model or computer algorithm that can then be used to predict and/or provide statistically-accurate probabilities of a desired value or quality being present or a future event occurring, given the identified characteristics of an individual patent or group of patents.

Brief Summary Text (12):
There are several drawbacks or limitations associated with the cost-basis valuation approach which limit its general applicability. One significant drawback is that the approach assumes a rational economic decision-maker. While such assumption might be statistically valid on a macro scale where many individual decisions and decision-makers are implicated (e.g., valuing all patents or a large subset of all patents), it is not necessarily a valid assumption when conducting valuation analysis on a micro scale (e.g., valuing a single patent or a portfolio of patents). It is one thing to assume that, on average, individual investment decisions and decision-makers are rational and economically motivated. It is a wholly different thing to assume that "each" investment decision or decision-maker is rational and economically motivated.

Brief Summary Text (20):
A computer-automated variation of the traditional market approach specifically adapted for rating patent portfolios is described in U.S. Pat. No. 5,999,907. In this case, a first database is provided containing information describing selected characteristics of a portfolio of patents to be acquired. A second database is provided containing empirical data describing selected characteristics of representative patent portfolios having known market values. Estimated valuations are obtained by comparing information in the first data base to information in the second database to determine which known patent portfolio the portfolio to be acquired matches the closest. The value of the closest matching known portfolio is then used as a rough approximation of the value of the portfolio to be acquired.

Brief Summary Text (21):
While such approach provides an innovative variation of the market-based valuation technique described above, it is again ultimately limited by the need to acquire relevant market data of known patent portfolios. As noted above, such information is very difficult to obtain. Unless a large amount of such data could be collected and analyzed, the effectiveness and accuracy of such an approach would be very limited. Even if a large amount of such data could be collected and stored in a suitable computer-accessible database, the process of individually retrieving and comparing relevant characteristics of each representative portfolio in the database would be undesirably time consuming, even using a high-speed computer. Moreover, the statistical accuracy of the resulting approximated valuations would be undetermined.

Brief Summary Text (26):
Each of the above valuation approaches has its characteristic strengths and weaknesses. Of course, no single valuation method can provide absolute certainty of the true intrinsic value of an asset. This is especially true when valuing patents and other intangible intellectual property assets. Nevertheless, a need exists for a comparative valuation technique that overcomes the aforementioned problems and limitations and which does not require collecting comparative market data of existing patent portfolios or calculating future hypothetical income streams or royalty rates. There is a further need for an intellectual property valuation method that produces statistically accurate valuations, ratings or rankings according to a determined statistical accuracy.

Brief Summary Text (28):
The present invention compliments and improves upon traditional valuation approaches by providing an objective, statistical-based rating method and system for independently assessing the relative breadth ("B"), defensibility ("D") and commercial relevance ("R") of individual patent assets and other intangible intellectual property assets according to a determined statistical accuracy. Thus, the invention can be used to provide new and valuable information that can be used by patent valuation experts, investment advisors, economists and others to help guide future patent investment decisions, licensing programs, patent appraisals, tax valuations, transfer pricing, economic forecasting and planning, and even mediation and/or settlement of patent litigation lawsuits.

Brief Summary Text (29):
In one embodiment the invention provides a statistically-based patent rating method and system whereby relative ratings or rankings are generated using a database of patent information by identifying and comparing various characteristics of each individual patent to a statistically determined distribution of the same characteristics within a given patent population. For example, a first population of patents having a known relatively high intrinsic value or quality (e.g. successfully litigated patents) is compared to a second population of patents having a known relatively low intrinsic value or quality (e.g. unsuccessfully litigated patents). Based on a statistical comparison of the two populations, certain characteristics are identified as being more prevalent or more pronounced in one population group or the other to a statistically significant degree. Multiple such statistical comparisons are used to construct and optimize a computer model or computer algorithm that can then be used to accurately predict and/or provide statistically-accurate probabilities of a desired value or quality being present or a future event occurring, given the identified characteristics of an individual patent or group of patents.

Brief Summary Text (35):
In accordance with another embodiment the invention provides a statistical method for scoring or rating selected qualities of individual patents and for generating a rating report specific to each individual patent rated. The method begins by providing a first database of selected patent information identifying and/or quantifying certain selected characteristics of individual patents from a first population of patents having a selected patent quality of interest. A second database (or identified subset of the first database) of selected patent information is also provided identifying and/or quantifying certain selected characteristics of individual patents from a second population of patents generally lacking or having reduced incidence of the selected patent quality of interest. Statistical analysis is performed to identify one or more characteristics that are statistically more prevalent or more pronounced

in either the first or second patent population to a statistically significant degree. Based on this information and the identified characteristics, individual patents may be scored or rated by positively weighting those having the same or similar characteristics and negatively weighting those lacking the same or similar characteristics. If desired, the method may be used to generate a patent rating report including basic information identifying a particular reported patent or patents of interest and one or more ratings or rankings determined in accordance with the method described above.

Drawing Description Text (6):
FIG. 4 is a graph of percentages of litigated patents found to be infringed by a federal district court according to the average number of words per independent claim, illustrating the declining incidence of patent infringement with length of patent claim;

Detailed Description Text (3):
The quality of a patent in terms of the breadth or scope of rights secured, its defensibility against validity challenges and its commercial relevance can have particularly dramatic impact on its value. Obviously, a patent that has a very narrow scope of protection or that is indefensible against a validity challenge will have much less value than a patent that has a broad scope of protection and strong defensibility. A skilled patent lawyer can examine the claims and specification of a patent, its prosecution history and cited prior art and, based on a detailed legal analysis, render a subjective opinion as to the likely scope and defensibility of the patent. However, such legal work is time-intensive and expensive. Thus, it may not be economically feasible to consult with a patent lawyer in every situation where such information may be desired.

Detailed Description Text (4):
The patent rating method and system of the present invention is not proposed to replace conventional legal analysis or traditional valuation methods, but to complement and support the overall evaluative process. In one embodiment, the present invention provides an objective, statistical-based rating method and system for substantially independently assessing the relative breadth ("B"), defensibility ("D") and commercial relevance ("R") of individual patent assets and other intangible intellectual property assets. Thus, the invention can provide new and valuable information which can be used by patent valuation experts, investment advisors, economists and others to help guide future patent investment decisions, licensing programs, patent appraisals, tax valuations, transfer pricing, economic forecasting and planning, and even mediation and/or settlement of patent litigation lawsuits. Such information may include, for example and without limitation: statistically calculated probabilities of particular desired or undesired qualities being present; statistical probabilities of certain future events occurring relative to the asset in question; ratings or rankings of individual patents or patent portfolios; ratings or rankings of patent portfolios held by public corporations; ratings or rankings of patent portfolios held by pre-IPO companies; ratings or rankings of individual named inventors; and ratings or rankings of professional service firms, law firms and the like who prepare, prosecute and enforce patents or other intellectual property assets.

Detailed Description Text (5):
In its simplest form the present invention provides a statistical patent rating method and system for rating or ranking patents based on certain selected patent characteristics or "patent metrics." Such patent metrics may include any number of quantifiable parameters that directly or indirectly measure or report a quality or characteristic of a patent. Direct patent metrics measure or report those characteristics of a patent that are revealed by the patent itself, including its basic disclosure, drawings and claims, as well as the PTO record or file history relating to the patent. Specific patent metrics may include, for example and without limitation, the number of claims, number of words per claim, number of different words per claim, word density (e.g., different-words/total-words), length of patent specification, number of drawings or figures, number of cited prior art references, age of cited prior art references, number of subsequent citations received, subject matter classification and sub-classification, origin of the patent (foreign vs. domestic), payment of maintenance fees, prosecuting attorney or firm, patent examiner, examination art group, length of pendency in the PTO, claim type (i.e. method, apparatus, system), etc.

Detailed Description Text (7):
For example, each word and/or word phrase in a patent claim (and/or patent specification) could be assigned a point value according to its frequency of use in a randomly selected population of similar patents in the same general field. Statistically common words or word phrases such as simple articles, pronouns and the like could receive relatively low point values. Uncommon words or word phrases could receive relatively high point values. The total point score for each claim could then be taken as an indication of its relative breadth or narrowness based on the total number and statistical prevalence of each of the words contained in the claim. Optionally, different amounts of points can be accorded to claim words or word phrases based on whether or not they also appear in the patent specification. Multiple claims and/or patents could also be combined into a single analysis, if desired.

Detailed Description Text (8):
In accordance with one preferred embodiment of the invention relative ratings or rankings are generated using a database of selected patent information by identifying and comparing various relevant characteristics or metrics of individual patents contained in the database. In one example, a first population of patents having a known or assumed relatively high intrinsic value (e.g. successfully litigated patents) are compared to a second population of patents having a known or assumed relatively low intrinsic value (e.g. unsuccessfully litigated patents). Based on the comparison, certain characteristics are identified as statistically more prevalent or more pronounced in one population group or the other to a significant degree.

Detailed Description Text (54):
Another interesting pattern is that foreign originating patents (i.e., patents claiming priority to a foreign parent application) are much less likely to be litigated than domestic originating patents. For example, a study of the relevant data reveals that 0.67% of all patents issued in 1990 were litigated, compared to 0.16% of foreign originating patents. Moreover the incidence of patent litigation varies significantly with country of origin. Only 0.10% of all Japanese originating patents issued in 1990 were litigated compared to 0.38% of U.K. originating patents and compared to 0.15% of German originating patents. These differences may reflect disparities in the relative costs of litigation for various foreign patentees as well as language and cultural differences.

Detailed Description Text (58):
For example, it is a commonly-held notion among patent professionals that certain claim language or claim limitations can have narrowing effects on the scope of patent claims. Claims that are very long and recite many detailed limitations or that recite limitations in the form of "means plus function" language and the like can significantly restrict the scope of patent claims. Therefore, it is anticipated that patent metrics reflecting such qualities (e.g., large number of words per claim, or large number of different words per claim, use of "means" language and the like) will have a statistically significant negative correlation with favorable litigation results.

Detailed Description Text (60):
As indicated in Table 1, above, asserted patent claims that contained at least one "means" limitation were found to be infringed about 8.7% (4.1% in absolute percentage terms) less often than asserted patent claims that did not contain a means limitation. This supports the notion that "means" limitations have a narrowing effect on claim breadth.

Detailed Description Text (61):
Similarly, FIG. 4 is a graph 320 of percentages of litigated patents found to be infringed by a federal district court between 1987 and 1998, illustrating a statistical relationship between the incidence of infringement and the average number of words or "word count" per independent claim. The graph generally illustrates a declining incidence of patent infringement with increasing word count. Again, this supports the generally-held notion that longer claims are narrower than shorter claims. Of course, those skilled in the art will recognize that more sophisticated relationships could also be established and characterized statistically.

Detailed Description Text (63):
If multiple independent claims are being considered for each patent, it may be helpful to

develop a "relatedness index" metric which characterizes the relatedness of each claim to one or more other claims of the patent (and/or one or more other patents). All other things being equal, it is expected that a patent having two or more claims that are highly related to one another (e.g., having substantially overlapping claim coverage) would be narrower in overall scope than a patent having two or more claims that are substantially dissimilar from one another (and, therefore, likely cover different subject matter). One convenient way to formulate a relatedness index is to compare the number of words that are common to each claim versus the number of words that are unique to each claim. For example, a first claim of interest (claim 1) may contain 95% of the same words in common with a second claim of interest (claim 2). Therefore, the two claims could be described as having a relatedness index (R.sub.1,2) of 95% or 0.95. However, a third claim of interest (claim 3) may contain only 45% of the same words in common with the first claim (claim 1). Therefore, these two claims could be described as having a relatedness index (R.sub.1,3) of 45% or 0.45. More sophisticated approaches could further weight or score each word in accordance with frequency of use as described above, and/or could provide for matching of similar or synonymous words. A relatedness index metric could also be developed and used to compare the relatedness or apparent relatedness of one or more patent specifications. This could be useful, for example, in identifying related or similar patents within a portfolio.

Detailed Description Text (82):
As illustrated in FIG. 11, the report 700 contains some basic data 710 identifying the patent being reported, including the patent number, title of the invention, inventor(s), filing date, issue date and assignee (if any). Several individual patent ratings 720 are also provided, including overall patent breadth ("B"), defensibility ("D"), and commercial relevance ("R"). Breadth and Defensibility ratings are preferably generated by a computer algorithm that is selected and adjusted to be predictive of known litigation outcomes (e.g., infringement/non-infringement and validity/invalidity) of a selected population of litigated patents based on various comparative patent metrics. Relevance ratings are preferably generated using a computer algorithm selected and adjusted to be predictive of patent maintenance rates and/or mortality rates based on various comparative patent metrics including, preferably, at least one comparative metric based on a normalized forward patent citation rate (normalized according to patent age). If desired, each of the B/D/R ratings can be statistically adjusted relative to the remaining ratings using known statistical techniques so as to minimize any undesired collinearity or overlap in the reported ratings.

Detailed Description Text (83):
In the particular example illustrated, ratings 720 are provided on a scale from 1 to 10. However, a variety of other suitable rating scales may also be used with efficacy, such as numerical rankings, percentile rankings, alphanumeric ratings, absolute or relative probabilities and the like. If desired, individual ratings or rankings 720 may also be combined using a suitable weighting algorithm or the like to arrive at an overall score or rating 730 for a given patent, patent portfolio or other intellectual property asset. The particular weighting algorithm used would preferably be developed empirically or otherwise so as to provide useful and accurate overall patent rating information for a given application such as investment, licensing, litigation analysis, etc.

Detailed Description Text (89):
Individual ratings 740, 750 and 755 in report 700 preferably provide numerical ratings (1-10) of the likely breadth ("B"), defensibility ("D"), and relevance ("R") of each claim of the reported patent (and/or the patent as a whole). Such "BDR" ratings may alternatively be expressed in a variety of other suitable formats, such as letters, symbols, integer numerals, decimal numerals, percentage probabilities, percentile rankings, and the like. For example, a letter scoring system (e.g., A-E) could be assigned for each of the individual B/D/R components. In that case, a BDR rating of "B/A/A" would represent a "B" rating for breadth, and "A" ratings for both defensibility and relevance. An overall rating could then be derived from the individual BDR component ratings using a suitable conversion index rating system as generally illustrated below in Table 4:

Detailed Description Text (95):
Patents having the highest percentile rankings in accordance with the rating methods disclosed

herein would then be correlated to the high end of the value distribution curve 800. Conversely, patents having the lowest percentile rankings in accordance with the rating methods disclosed herein would then be correlated to the low end of the value distribution curve 800. Advantageously, such allocative valuation approach brings an added level of discipline to the overall valuation process in that the sum of individual patent valuations for a given patent population cannot exceed the total aggregate estimated value of all such patents. In this manner, fair and informative valuations can be provided based on the relative quality of the patent asset in question without need for comparative market data of other patents or patent portfolios, and without need for a demonstrated (or hypothetical) income streams for the patent in question. Estimated valuations are based simply on the allocation of a corresponding portion of the overall patent value "pie" as represented by each patents' relative ranking or position along value distribution curve 800.

Detailed Description Text (101):
Ideally, it would also be possible for a user to request reports on all patents associated with a specific commercial product. Such product patent information could advantageously be collected and stored on a centralized, searchable computer network database or the like in order to allow users to search and obtain patent information on particular commercial products. Relevant patent marking data could be gathered either through private voluntary reporting by manufacturers of such products and/or it may be gathered through other available means, such as automated web crawlers, third-party reporting or inputting and the like. Patent marking data (e.g., the presence or absence of a patent notice on a corresponding commercial product) and/or other relevant data (e.g., sales volume, sales growth, profits, etc.) could provide additional objective metric(s) by which to rate relevant patents in accordance with the invention. Presumably, patents that are being actively commercialized are more valuable than "paper patents" for which there is no corresponding commercial product. Optionally, the patent marking database can also include the necessary URL address information and/or the like which will allow users to hot-link directly to a third-party web page for each corresponding product and/or associated product manufacturer.

Detailed Description Text (103):
Another service that may be provided in a preferred Internet-based application of this invention is a user-updated information database. According to this embodiment, certain users and/or all users would be allowed to post information they believe is pertinent to a particular patent or group of patents. Such information might include prior art that was not cited in the patent, possible license terms, potential problems with the written description or claims of the patent, information about the inventors, information relating to sales of patented products prior to the filing date, legal opinions, related litigation, and any other information that might be relevant to the patent. The information would preferably be stored and displayed in association with each particular patent to which it is relevant. Thus, from the user's perspective each patent would, in effect, have its own bulletin board or note pad associated with it, upon which users may post relevant information. Other information could also be displayed, such as license terms available, commercial product information, other patents of interest, electronic file wrappers, hot-links to other sites, and the like.

Detailed Description Text (104):
Optionally, submitters could also provide their own rating or ranking of the patent in question, such that patents could be essentially self-rated by users. In the preferred embodiment, only qualified users (or selected patent analysts) would be allowed to post such ratings. The qualification process could be as simple as filling out a questionnaire or as thorough as an independent verification of credentials. It is also possible to employ the methodology currently used by such web sites as "epinions.com" to track the popularity and veracity of individual user-submitted information and determine which users are most trusted. Those users that are most trusted would be brought to the top of the patent information database and their authors compensated according to the number of times users accessed the information, while less-popular submitters' information would sink in rank. Users and/or analysts could also be compensated financially (or otherwise) based on the accuracy of their ratings relative to the collective rating prediction and/or relative to the occurrence of a predicted future event. This would motivate more careful analysis and more accurate ratings. See, U.S. Pat. No. 5,608,620, incorporated herein by reference, for a description of a

collective prediction and forecasting method using multiple individual forecasters, which may be readily adapted and applied to the present invention as disclosed herein.

Detailed Description Text (105):
The present invention is also well suited for incorporation into a newsletter service, such as the numerous financial newsletters currently available to Wall Street investors. In this embodiment of the invention, the rating system described herein would preferably be applied to a pre-defined subset of issued patents--for instance, all patents newly issued to "Fortune 500" companies or designated "Pre-IPO" companies. Overall patent ratings would be denoted with a standardized system, such as a 1-10 scale, four stars, bond-style ratings, "BDR" ratings and/or the like. Preferably, requested reports would be automatically generated and e-mailed to each subscriber on a periodic basis and/or on an event-triggered basis, as desired. In this way, subscribers would be provided with a standardized method of comparing patent portfolios of various companies from week to week.

Other Reference Publication (3):
Barron, Russell J. "Better Accounting for Patent Portfolios" Legal Times. Oct. 16, 2000. pp. 91-92.

CLAIMS:

11. The method of claim 1 wherein said third population of patents is selected from the group consisting of either: an individual selected patent, a group of commonly owned patents, a portfolio of patents controlled by one or more public corporations, a portfolio of patents controlled by one or more pre-IPO companies, all patents listing one or more particular named inventors, all patents naming one or more particular prosecuting attorneys or law firms, all patents classified within one or more PTO patent classifications, or all patents issued between a first date and a second date.

13. The method of claim 12 wherein said selected patent metrics include one or more of the following: number of claims per patent, number of words per claim, different words per claim, length of patent specification, number of drawing pages or figures, number of cited prior art references, age of cited references, number of subsequent citations received, subject matter classification and sub-classification, origin of the patent, payment of maintenance fees, name of prosecuting attorney or law firm, examination art group, or length of pendency in the PTO.

27. The method of claim 24 wherein said patent rating report contains at least one reported rating or ranking that is generally representative of the breadth ("B") or likely infringement of the selected patent or group of patents, at least one reported rating or ranking that is generally representative of the defensibility ("D") or likely validity of the selected patent or group of patents, and at least one reported rating or ranking that is generally representative of the commercial relevance ("R") or technical merit of the selected patent or group of patents.

34. The method of claim 33 wherein said predefined population of patents comprises one or more of the following: a group of commonly owned patents, a portfolio of patents controlled by one or more public corporations, a portfolio of patents controlled by one or more pre-IPO companies, all patents listing one or more particular named inventors, all patents naming one or more particular prosecuting attorneys or law firms, all patents classified within one or more PTO patent classifications, or all patents issued between a first date and a second date.

36. The method of claim 35 wherein said extracted patent metrics include one or more of the following: number of claims per patent, number of words per claim, different words per claim, length of patent specification, number of drawing pages or figures, number of cited prior art references, age of cited references, number of subsequent citations received, subject matter classification and sub-classification, origin of the patent, payment of maintenance fees, name of prosecuting attorney or law firm, examination art group, or length of pendency in the PTO.

52. The method of claim 49 wherein said intellectual property to be rated comprises one or more of the following: an individual selected patent, a group of commonly owned patents, a portfolio

Publisher: ACM Press
Full text available: pdf(187.88 KB) Additional Information: full citation, abstract, references, index terms

Astronomy increasingly faces the issue of massive, unwieldly data sets. The Sloan Digital Sky Survey (SDSS) [11] has so far generated tens of millions of images of distant galaxies, of which only a tiny fraction have been morphologically classified. Morphological classification in this context is achieved by fitting a parametric model of galaxy shape to a galaxy image. This is a nonlinear regression problem, whose challenges are threefold, 1) blurring of the image caused by atmosphere and mirror ...

Keywords: astronomy, morphology, nearest neighbor, pincipal component analysis, regression

4 Multimedia and visualization (MV): Contour-based partial object recognition using symmetry in image databases

June-Suh Cho, Joonsoo Choi
March 2005 **Proceedings of the 2005 ACM symposium on Applied computing SAC '05**
Publisher: ACM Press
Full text available: pdf(210.97 KB) Additional Information: full citation, abstract, references

This paper discusses the problem of partial object recognition in image databases. We propose the method to reconstruct and estimate partially occluded shapes and regions of objects in images from overlapping and cutting. We present the robust method for recognizing partially occluded objects based on symmetry properties, which is based on the contours of objects. Our method provides simple techniques to reconstruct occluded regions via a region copy using the symmetry axis within an object. Bas ...

Keywords: contour, image, object, recognition, symmetry

5 Modelling and animating humans: Animating blendshape faces by cross-mapping motion capture data

Zhigang Deng, Pei-Ying Chiang, Pamela Fox, Ulrich Neumann
March 2006 **Proceedings of the 2006 symposium on Interactive 3D graphics and games SI3D '06**
Publisher: ACM Press
Full text available: pdf(667.99 KB) Additional Information: full citation, abstract, references, index terms

Animating 3D faces to achieve compelling realism is a challenging task in the entertainment industry. Previously proposed face transfer approaches generally require a high-quality animated source face in order to transfer its motion to new 3D faces. In this work, we present a semi-automatic technique to directly animate popularized 3D blendshape face models by mapping facial motion capture data spaces to 3D blendshape face spaces. After sparse markers on the face of a human subject are captured ...

Keywords: blend shape models, cross-mapping, facial animation, motion capture data, radial basis functions

6 Industry/government track papers: Eigenspace-based anomaly detection in computer systems

Tsuyoshi IDÉ, Hisashi KASHIMA
August 2004 **Proceedings of the tenth ACM SIGKDD international conference on Knowledge discovery and data mining KDD '04**
Publisher: ACM Press

Full text available: pdf(434.19 KB) Additional Information: full citation, abstract, references, citings, index terms

We report on an automated runtime anomaly detection method at the application layer of multi-node computer systems. Although several network management systems are available in the market, none of them have sufficient capabilities to detect faults in multi-tier Web-based systems with redundancy. We model a Web-based system as a weighted graph, where each node represents a "service" and each edge represents a dependency between services. Since the edge weights vary greatly over time, the problem ...

Keywords: Perron-Frobenius theorem, principal eigenvector, singular value decomposition, time sequence of graphs, von Mises-Fisher distribution

7 Graph isomorphism testing without numerics for graphs of bounded eigenvalue multiplicity

Martin Fürer

January 1995 **Proceedings of the sixth annual ACM-SIAM symposium on Discrete algorithms**

Publisher: Society for Industrial and Applied Mathematics

Full text available: pdf(881.80 KB) Additional Information: full citation, references, citings, index terms

8 Efficient model reduction of interconnect via approximate system gramians

Jing-Rebecca Li, Jacob White

November 1999 **Proceedings of the 1999 IEEE/ACM international conference on Computer-aided design**

Publisher: IEEE Press

Full text available: pdf(96.06 KB) Additional Information: full citation, abstract, references, citings, index terms

Krylov-subspace based methods for generating low-order models of complicated interconnect are extremely effective, but there is no optimality theory for the resulting models. Alternatively, methods based on truncating a balanced realization (TBR), in which the observability and controllability gramians have been diagonalized, do have an optimality property but are too computationally expensive to use on complicated problems. In this paper we present a method for computing reduced-order mode ...

Keywords: Krylov subspace, Lyapunov equation, model reduction, truncated balanced realization, vector ADI

9 The complexity of the matrix eigenproblem

Victor Y. Pan, Zhao Q. Chen

May 1999 **Proceedings of the thirty-first annual ACM symposium on Theory of computing**

Publisher: ACM Press

Full text available: pdf(934.49 KB) Additional Information: full citation, references, citings, index terms

10 Overview of patent retrieval task at NTCIR-3

Makoto Iwayama, Atsushi Fujii, Noriko Kando, Akihiko Takano

July 2003 **Proceedings of the ACL-2003 workshop on Patent corpus processing - Volume 20**

Publisher: Association for Computational Linguistics

Full text available: pdf(166.62 KB) Additional Information: full citation, abstract, references

We describe the overview of patent retrieval task at NTCIR-3. The main task was the technical survey task, where participants tried to retrieve relevant patents to news articles. In this paper, we introduce the task design, the patent collections, the characteristics of the submitted systems, and the results overview. We also arranged the free-styled task, where participants could try anything they want as far as the patent collections were used. We describe the brief summaries of the proposals ...

11 Research track papers: IDR/QR: an incremental dimension reduction algorithm via QR decomposition

Jieping Ye, Qi Li, Hui Xiong, Haesun Park, Ravi Janardan, Vipin Kumar

August 2004 **Proceedings of the tenth ACM SIGKDD international conference on Knowledge discovery and data mining KDD '04**

Publisher: ACM Press

Full text available: pdf(209.30 KB) Additional Information: full citation, abstract, references, index terms

Dimension reduction is critical for many database and data mining applications, such as efficient storage and retrieval of high-dimensional data. In the literature, a well-known dimension reduction scheme is Linear Discriminant Analysis (LDA). The common aspect of previously proposed LDA based algorithms is the use of Singular Value Decomposition (SVD). Due to the difficulty of designing an incremental solution for the eigenvalue problem on the product of scatter matrices in LDA, there is little ...

Keywords: QR decomposition, dimension reduction, incremental learning, linear discriminant analysis

12 Proposal of two-stage patent retrieval method considering the claim structure

Hisao Mase, Tadataka Matsubayashi, Yuichi Ogawa, Makoto Iwayama, Tadaaki Oshio

June 2005 **ACM Transactions on Asian Language Information Processing (TALIP)**, Volume 4 Issue 2

Publisher: ACM Press

Full text available: pdf(318.55 KB) Additional Information: full citation, abstract, references, index terms

The importance of patents is increasing in global society. In preparing a patent application, it is essential to search for related patents that may invalidate the invention. However, it is time-consuming to identify them among the millions of patents. This article proposes a patent-retrieval method that considers a claim structure for a more accurate search for invalidity. This method uses a claim text as input; it consists of two retrieval stages. In stage 1, general text analysis and retrieva ...

Keywords: Patent retrieval, claim structure, relevant score calculation, term extraction, term weighting

13 Algorithm 775: the code SLEUTH for solving fourth-order Sturm-Liouville problems

Leon Greenberg, Marco Marletta

December 1997 **ACM Transactions on Mathematical Software (TOMS)**, Volume 23 Issue 4

Publisher: ACM Press

Full text available: pdf(279.52 KB) Additional Information: full citation, abstract, references, citings, index terms, review

We describe a new code (SLEUTH) for numerical solution of regular two-point fourth-order Sturm-Liouville eigenvalue problems. Eigenvalues are computed according to index: the user specifies an integer k***0, and the code computes an approximation to the kth eigenvalue. Eigenfunctions are also avialable through an auxiliary routine, called after the eigenvalue has been determined. The code will be made available through netlib.

Keywords: SLEUTH

14 Model order reduction and variational techniques for parasitic analysis: Passivity-preserving model reduction via a computationally efficient project-and-balance scheme

N. Wong, V. Balakrishnan, C.-K. Koh

June 2004 **Proceedings of the 41st annual conference on Design automation**

Publisher: ACM Press

Full text available: pdf(208.42 KB) Additional Information: full citation, abstract, references, index terms

This paper presents an efficient t o-stage project-and-balance scheme for passivity-preserving model order reduction. Orthogonal dominant eigenspace projection is implemented by integrating the Smith method and Krylov subspace iteration. It is followed by stochastic balanced truncation herein a novel method, based on the complete separation of stable and unstable invariant subspaces of a Hamiltonian matrix, is used for solving two dual algebraic Riccati equations at the cost of essentially one. ...

Keywords: Riccati equation, SR algorithm, dominant eigenspace, model reduction, projection, stochastic balanced truncation

15 Face recognition: A literature survey

W. Zhao, R. Chellappa, P. J. Phillips, A. Rosenfeld

December 2003 **ACM Computing Surveys (CSUR)**, Volume 35 Issue 4

Publisher: ACM Press

Full text available: pdf(4.28 MB) Additional Information: full citation, abstract, references, citings, index terms

As one of the most successful applications of image analysis and understanding, face recognition has recently received significant attention, especially during the past several years. At least two reasons account for this trend: the first is the wide range of commercial and law enforcement applications, and the second is the availability of feasible technologies after 30 years of research. Even though current machine recognition systems have reached a certain level of maturity, their success is ...

Keywords: Face recognition, person identification

16 Isomorphism of graphs with bounded eigenvalue multiplicity

László Babai, D. Yu. Grigoryev, David M. Mount

May 1982 **Proceedings of the fourteenth annual ACM symposium on Theory of computing**

Publisher: ACM Press

Full text available: pdf(965.30 KB) Additional Information: full citation, abstract, references, citings

We investigate the connection between the spectrum of a graph, i.e. the eigenvalues of the adjacency matrix, and the complexity of testing isomorphism. In particular we describe two polynomial time algorithms which test isomorphism of undirected graphs whose eigenvalues have bounded multiplicity. If X and Y are graphs of eigenvalue multiplicity m, then the isomorphism of X and Y can be tested by an O(n4m+c) deterministic and by an O(n2m+c) Las Vegas ...

17 Automated categorization in the international patent classification

C. J. Fall, A. Törcsvári, K. Benzineb, G. Karetka

April 2003 **ACM SIGIR Forum**, Volume 37 Issue 1
Publisher: ACM Press

Full text available: pdf(1.32 MB) Additional Information: full citation, abstract, references, index terms, review

A new reference collection of patent documents for training and testing automated categorization systems is established and described in detail. This collection is tailored for automating the attribution of international patent classification codes to patent applications and is made publicly available for future research work. We report the results of applying a variety of machine learning algorithms to the automated categorization of English-language patent documents. This procedure involves a ...

Keywords: IPC taxonomy, automated categorization, patent, support vector machines

18 On Hensel construction of eigenvalues and eigenvectors of matrices with polynomial entries
Kazuhiro Yokoyama, Taku Takeshima
August 1993 **Proceedings of the 1993 international symposium on Symbolic and algebraic computation**
Publisher: ACM Press
Full text available: pdf(721.54 KB) Additional Information: full citation, references, index terms

19 Animation: Statistical synthesis of facial expressions for the portrayal of emotion
Lisa Gralewski, Neill Campbell, Barry Thomas, Colin Dalton, David Gibson, University of Bristol
June 2004 **Proceedings of the 2nd international conference on Computer graphics and interactive techniques in Australasia and South East Asia GRAPHITE '04**
Publisher: ACM Press
Full text available: pdf(907.19 KB) Additional Information: full citation, abstract, references, index terms

This paper presents a novel technique for the generation of 'video textures' to display human emotion. This is achieved by a method which uses existing video footage to synthesise new sequences of coherent facial expression and head motions.An '*expression space*' which is defined by sets of emotion models is constructed using principal component analysis (PCA) and the application of an auto-regressive process (ARP). Using this expression space a tool has been developed which enables this ...

Keywords: emotion, image based rendering, modelling, principal components analysis, self organising maps, synthesis

20 Surface fitting using GCV smoothing splines on supercomputers
Alan Williams, Kevin Burrage
December 1995 **Proceedings of the 1995 ACM/IEEE conference on Supercomputing (CDROM) - Volume 00 Supercomputing '95**
Publisher: ACM Press, IEEE Computer Society
Full text available: pdf(277.54 KB) html(2.25 KB) Publisher Site Additional Information: full citation, abstract, references, index terms

The task of fitting smoothing spline surfaces to meteorological data such as temperature or rainfall observations is computationally intensive. The Generalised Cross Validation (GCV) smoothing algorithm is $O(n^3)$ computationally, and memory requirements are 0

(n^2). Fitting a spline to a moderately sized data set of, for example. 1080 observations and calculating an output surface grid of dimension 220 × 220 involves approximately 5 billion floating point operations, and takes approximately 19 minu ...

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L9	L5 and preamble	2	L9
L8	L7 and preamble	0	L8

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L4	L2 and (claim near breadth)	0	L4
L3	L2 and (claim near text)	0	L3
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L1	patent near portfolio	31	L1

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